

## **EXECUTIVE SUMMARY**

### **INTRODUCTION**

Equilon Enterprises LLC, dba (doing business as) Shell Oil Products US (Applicant or Shell) is the owner and operator of the Shell Martinez Marine Oil Terminal (Shell Terminal) located adjacent to the Shell Martinez Refinery (Refinery) in Contra Costa County, as shown in Figure ES-1. The California State Lands Commission (CSLC) is considering an application for a new 30-year lease of California sovereign lands to Shell. The lease, if granted, would allow Shell to continue to operate its Shell Terminal.

The Project objective is to maintain the Refinery operational viability by continuing current Shell Terminal operations. Without the use of the Shell Terminal, the Refinery would not be viable and would be shut down. The issuance of a new lease by the CSLC for the Shell Terminal is required for continued operation of the Refinery.

The CSLC is serving as Lead Agency responsible for preparing this Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA) to analyze the environmental impacts associated with operation of the Shell Terminal. Particular emphasis will be placed on oil transfer operations at the Shell Terminal, and vessel transit along shipping routes within Carquinez Strait, San Pablo and San Francisco Bays, and along the outer coast. This EIR will provide the CSLC the information required to exercise its jurisdictional responsibilities for the proposed new lease.

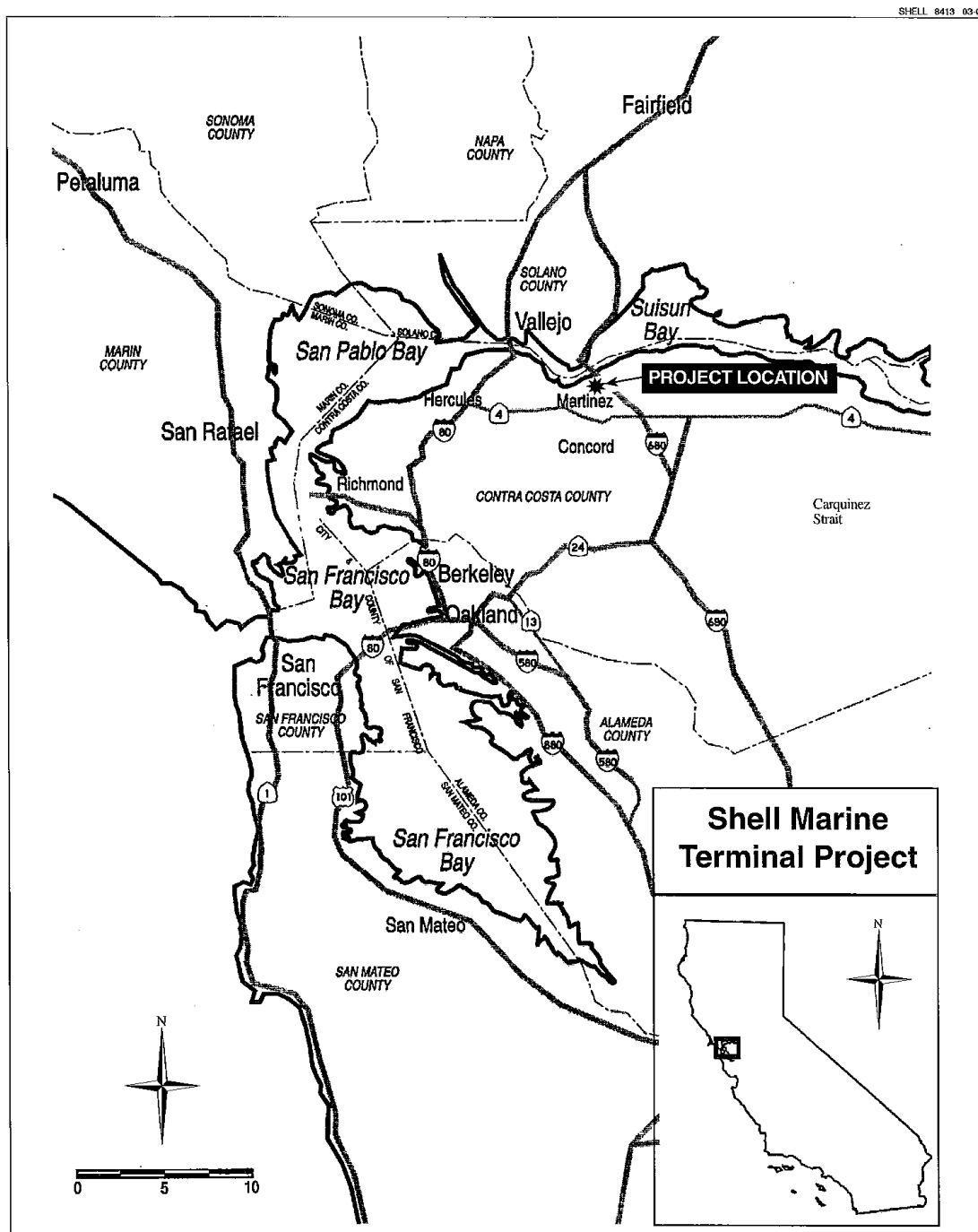
### **DESCRIPTION OF PROPOSED PROJECT**

The Shell Terminal facility consists of an approximate 28-acre footprint of stateowned sovereign land leased from the CSLC as a barge and tanker transfer facility for crude oil and petroleum products. The Shell Terminal is capable of operating 365 days a year, 24 hours a day, although actual operation depends on shipping demands. The Shell Terminal supports the Shell Refinery, located immediately south of the Shell Terminal on 850 acres of Shell-owned (Upland) property.

The T-shaped Shell Terminal (see Figure 2.3-1) consists of a 1,950-foot long, average 40-foot wide, concrete wharf connected to shore by a 1,900-foot long, 16-foot wide, elevated wooden approach roadway. A 40-foot-wide pile-supported pipe rack parallels the approach roadway.

The Shell Terminal has four berths – two berths (#1 and #2) on the outer (north) side, and two berths (#3 and #4) on the inner (south) side – equipped with pumps, pipelines, electrical utilities and other mechanical equipment. The terminal can moor tankers up to 1,000-feet in length at one of the outer berths, while also simultaneously mooring a smaller vessel. The inner berths currently are not in use, due to accumulated silt.

Figure ES-1 – Project Vicinity Map



Maximum throughput is based on Shell's Bay Area Air Quality Management District (BAAQMD) Title V Permit to Operate for the Refinery and the Marine Terminal. Terminal throughput ranges from 17,000,000 bpy (current) to 27,000,000 bpy (anticipated maximum). Annual ship and barge traffic currently averages 265 vessels per year. Future estimates are 260 to 330 vessels per year. Future increases are based on increased crude oil receipts.

Shell records indicate that, during the 1994 to 2004 period, the Shell Terminal handled as many as 420 annual vessel calls at a volume of 48,300,000 bpy. The maximum capacity that the Shell Terminal could handle is 50,000,000 bpy, with increases expected from crude oil shipments rather than product deliveries. Future deliveries are expected to be via larger crude transport vessels, thus reducing the number of annual vessel calls. Shell estimates that future vessel traffic could reach up to 330 ships and barges per year. This anticipated range is based on increased Shell Terminal use via increased crude oil receipts rather than product deliveries. At this time, Shell does not have any immediate plans to modify the Shell Terminal over the 30-year term of the proposed lease, other than possibly to dredge and use the currently inactive Berths # 3 and # 4. This number for vessel calls served the basis for the impact analysis in Section 4.0, Existing Environment and Impacts Analysis, assuming no new Shell Terminal construction.

## ENVIRONMENTAL IMPACTS AND MITIGATION

This EIR includes a detailed evaluation of the potentially significant environmental effects that could result from implementation of the proposed Project, including operational safety/risk of accidents; marine biological resources; water quality; commercial and sports fishing; land use and recreation; air quality; noise; transportation; geology and soils/structural stability; cultural resources; socioeconomics, and environmental justice. Table ES-1 presents a summary of impacts and mitigation measures for the proposed Project. This table is presented by issue area. Within each issue area, each impact is described and classified, and recommended mitigation is presented. Impacts are classified as:

- **Class I** (significant adverse impact that remains significant after mitigation);
- **Class II** (significant adverse impact that can be eliminated or reduced below an issue's significance criteria);
- **Class III** (adverse impact that does not meet or exceed an issue's significance criteria); or
- **Class IV** (beneficial impact).

## **SUMMARY OF MAJOR IMPACTS OF THE PROJECT**

The Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS) were proposed by CSLC, were approved by the California Building Standards Commission on January 19, 2005, and became effective on February 6, 2006. MOTEMS are codified in CCR Title 24, Part 2, Chapter 31F (Marine Oil Terminals). Operators/owners of facilities deemed “high risk”, such as the Shell Terminal, must complete the listed tasks within 30 months of the enactment date, i.e., by August 2008, to complete the initial audit process. The standards apply to all existing and new marine oil terminals in California, and include criteria for inspection, structural analysis and design, mooring and berthing, geotechnical considerations, fire, piping, mechanical and electrical systems. Because Shell must comply with these standards, the resultant risk of small oil leaks and spills is minimized.

Still, moderate or large spills may originate from the Shell Terminal due to natural factors (earthquake), human error (berth collision, bad hose connection), or from a vessel moored at the terminal or transiting the tanker lanes in the Bay or along the outer coast. While the risk of moderate to large spills is small, the potential for impacts is significant for many environmental areas. The fate of spilled oil in the marine environment is determined by a variety of complex and interrelated physical, chemical, and biological transformations. Moderate to severe oil spills can result in impacts to water quality, marine biology, commercial and sport fisheries, shoreline land uses, shoreline and water recreational uses, and visual quality of surface water and shorelines. The impacts and mitigation measures are presented in Table ES-1.

The introduction of exotic species via ship’s ballast water has severely disturbed the aquatic communities of San Francisco Bay. Ballast water discharge that contains non-indigenous organisms (invasive species) could impair several of the Project area’s beneficial uses, including commercial and sport fishing, estuarine habitat, fish migration, preservation of rare and endangered species, water contact recreation, non-contact water recreation, fish spawning, and wildlife habitat. Significant adverse impacts can occur from releases or viruses, toxic algae or other harmful microorganisms. The impacts and mitigation measures are presented in Table ES-1.

## **ALTERNATIVES TO PROPOSED PROJECT**

The CEQA requires consideration of a range of reasonable alternatives to the project or project location that: (1) could feasibly attain most of the basic project objectives; and (2) would avoid or substantially lessen any of the significant impacts of the proposed Project. An alternative cannot be eliminated simply because it is more costly or if it could impede the attainment of all project objectives to some degree. However, the State CEQA Guidelines declare that an EIR need not consider an alternative whose effects cannot be reasonably ascertained and whose implementation is remote or

speculative. The CEQA requires that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project.

The screening analysis does not focus on relative economic factors (as long as they are feasible) since the State CEQA Guidelines require consideration of alternatives capable of eliminating or reducing significant environmental effects even though they may “impede to some degree the attainment of project objectives or would be more costly.” Likewise, the question of market demand or project need is not considered.

It should be noted that the EIR analysis included alternatives that potentially would result in greater environmental impacts to some issue areas, or would transfer a similar level of environmental impacts to other existing marine oil terminal facilities, as compared with the proposed Project. These alternatives have been included for analysis to demonstrate that, regardless of lease renewal, similar levels of impacts may occur in meeting the refining needs of the Bay area region by increased activities at other Bay area marine terminals and associated refineries.

If the CSLC refused to grant Shell a new lease for the land on which the Shell Terminal is located, Shell would not be able to support the operation of the Refinery. All considered alternatives meet the project objective of maintaining the viability of the Refinery, which includes the transportation of feed stocks and refined products at current throughput levels, but do not necessarily involve use of the Shell Terminal.

### **No Project Alternative**

Under the No Project Alternative, Shell’s lease would not be renewed and the existing Shell Terminal would be subsequently decommissioned with its components abandoned in place, removed, or a combination thereof. The decommissioning of the Shell Terminal would be governed by a Lease Termination and Abandonment Agreement.

Under the No Project Alternative, an alternative means of crude oil/product transport would need to be in place prior to the decommissioning of the Shell Terminal, or the operation of the Shell Refinery would cease production, at least temporarily. It is more likely, however, that under the No Project Alternative, Shell would pursue alternative means of traditional crude oil transport such as a pipeline conveyance or use of a different (another operator’s) marine oil terminal. Accordingly, the potential environmental impacts of these alternatives are described and analyzed in this EIR. For the purposes of this EIR, it has been assumed that the No Project Alternative would result in a decommissioning schedule that would consider implementation of one of the described transportation alternatives. Any future crude oil or product transport alternative would require a subsequent application to the CSLC and other agencies having jurisdiction, depending on the proposed alternative.

Decommissioning, abandonment, and/or deconstruction of the wharf or any other proposed reuse of the wharf would require a separate CEQA review. Since details

associated with decommissioning, abandonment, and/or deconstruction would need to be developed if they were to occur, for the purposes of this EIR, impacts are discussed only briefly.

### **Full Throughput Alternative**

The Shell Refinery is part of the greater Bay Area refining industry. The future demand for crude oil at the nearby refineries is not expected to decrease. With no Shell marine oil terminal (MOT), Shell Refinery operations would be dependent on crude oil receipts through pipelines via other Bay Area MOTs. This would be required to continue to meet regional refining demands.

Required modifications of the existing terminals would be subject to substantial environmental review and local permitting, thus is considered briefly within the resources analyses in Section 4.0 of this Environmental Impact Report (EIR).

This alternative assumes that, with no Shell MOT wharf to receive crude or transport product, pipelines connected to other Bay Area terminals would be used to provide the daily throughput capacity to the Shell Refinery. This could occur through several sources:

- Shell currently transfers some petroleum through the nearby Pacific Atlantic (formerly Shore) Terminals (a storage only facility) via pipeline. There may be some ability to increase storage capacity at the Pacific Atlantic facility and transfer petroleum to the Shell Refinery.
- Shell has two San Joaquin Valley pipelines in which it leases capacity for transfers from other Bay Area refiners. As a partial solution, if the Shell Terminal were inoperable, the Shell Refinery may be able to increase use of these pipelines, expand existing storage capacity at other refiners, or increase pipeline capacity.
- Shell recently purchased a pipeline that goes from the Richmond area to Antioch via Martinez. Currently, the Richmond pipeline terminates at a demolished wharf facility. However, a portion of this pipeline, in combination with new pipelines could connect other Bay Area terminals with the Shell Refinery.

Construction of new or modified pipelines would be required to equal the projected maximum of 50,000,000 bpy (137,000 bpd) of crude receipts through the Shell Terminal to the Shell Refinery. Pipelines capable of handling this capacity may be viable from an environmental perspective. However, prior to construction and use, lengthy and complex regulatory processes, land availability and obtainment of easements or rights-of-way would be required, and environmental review and local permitting would be conducted. Since modification specifics are assumed on a general basis, brief analyses are presented in Section 4.0 of this EIR.

## **COMPARISON OF PROPOSED PROJECT AND ALTERNATIVES**

The CEQA Guidelines (Section 15126.6 (d)) require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. Table ES-2 provides a comparison of the Proposed Project with each of the alternatives evaluated in this document, including the No Project Alternative.

## **ENVIRONMENTALLY SUPERIOR ALTERNATIVE**

The State CEQA Guidelines [section 15126.6 (d)] require that an EIR include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. The Guidelines [Section 15126.6 (e)(2)] further state, in part, *“If the environmentally superior alternative is the “No Project” alternative, the EIR shall also identify an environmentally superior alternative among the other alternatives.”* (Emphasis added).

The No Project Alternative eliminates impacts from the Shell Terminal; however, implementation of this alternative would shift similar levels of impact to other Bay area marine oil terminals that would make up the differential for crude oil and product transport throughout the Bay. Thus, by eliminating impacts of Shell Terminal operations at the Refinery, the No Project Alternative is environmentally superior, with the exception of significant impacts to the operational viability of the Refinery without a method of crude oil and product transport. Hence, the No Project Alternative would not meet the Project objective of maintaining Refinery operational viability.

The Full Throughput Alternative would eliminate operations and impacts at the Shell Terminal. This alternative results in the transfer of similar Class I and II impacts of the proposed Project to the other Bay area terminals. Similar impacts include operational safety/risk of accidents, water quality, biological resources, commercial and sports fisheries, land use/recreation, air quality, noise, and visual resources, structural integrity and environmental justice. Construction of pipelines between these terminals and the Shell Refinery would have the potential for Class I or II on-land spills/leaks, but with the potential for less overall severity than spills into the marine environment.

Under this alternative, the capacity of other marine terminals may be taxed, potentially increasing vessel congestion, collisions, as well as the costs while vessels wait to berth and offload/load.

Because the Full Throughput Alternative simply moves impacts from the Shell Terminal to the locations of other terminals, and has the added potential for on land pipeline spills, it is considered to represent a greater potential adverse environmental impact than the proposed Project.

The Full Throughput Alternative is the only alternative that meets the Project objective of maintaining Refinery operational viability. The Full Throughput Alternative does not represent a greater environmental benefit as that of the Proposed Project. When only one alternative to the Proposed Project is evaluated, identification of an environmentally superior alternative is not required.

The comparison between the proposed Project and the alternatives is presented in Table ES-2 for those impacts remaining significant after incorporation of mitigation measures.

### **KNOWN AREAS OF CONTROVERSY OR UNRESOLVED ISSUES**

There are no known areas of controversy surrounding the proposed Project. No objections to the proposed Project were raised at the public scoping meeting, and no correspondence has been received challenging the project or its potential environmental effects.



**Table ES-1**  
**Summary of Environmental Impacts for the Proposed Project**

Impact Classes:

Class I – (significant adverse impact that remains significant after mitigation);

Class II – (significant adverse impact that can be eliminated or reduced below an issue's significance criteria);

Class III – (adverse impact that does not meet or exceed an issue's significance criteria); or

Class IV – (beneficial impact).

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.1 OPERATION SAFETY/RISK OF UPSET</b>			
<b>OS-1</b>	There are some deficiencies with the existing deck drainage system and procedures that would pose a risk for, or increase the potential for spills at the Shell Terminal from routine operations. Preventative maintenance and operational equipment are required by MOTEMS, and impacts are adverse, but less than significant (Class III).	III	None required.
<b>OS-2</b>	Potential impacts to public safety from a highly volatile product release are less than significant (Class III) since the liquids evaporate and disperse quickly.	III	None required.
<b>OS-3</b>	Shell's response capability for containment of spills during transfer operations would be adverse and significant for spills greater than 50 barrels (bbls), and range from spills that can be contained during first response efforts with rapid cleanup (Class II), to those complex spills that result in a significant impact (Class I) with residual effects after mitigation.	I or II	<p><b>OS-3a:</b> Provide mooring quick release devices that shall be able to be activated within 60 seconds. These devices shall be capable of being engaged by, in addition to the manual release mechanism, an electric/push button release mechanism and by a remotely-operated release mechanism. These measures would allow a vessel to leave the Shell Terminal as quickly as possible in the event of an emergency (fire, accident, or tsunami that could lead to a spill) that could impact the Shell Terminal or the vessel.</p> <p><b>OS-3b:</b> Install devices to continuously monitor moored vessels' movements. The devices shall monitor for surge, sway, and heave in real time, in the control room during all transfer operations. An alarm system (visual and sound) that incorporates communication to the control-building operator shall also be a part of the system.</p>

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.1 OPERATION SAFETY/RISK OF UPSET</b>			
			<b>OS-3c:</b> Install Allision Avoidance System (AAS) at the Shell Terminal to prevent damage to the pier and/or vessel during docking operations. Prior to implementing this measure, Shell shall consult with the San Francisco Bay Bar Pilots, the U.S. Coast Guard, and the staff of the California State Lands Commission (CSLC) and provide information that would allow the CSLC to determine, on the basis of such consultations and information regarding the nature, extent and adequacy of the existing berthing system, the most appropriate application and timing of an AAS at the Shell Terminal.
<b>OS-4</b>	Group V oils have a specific gravity greater than 1 and do not float on the water; instead, they will sink below the surface into the water column or possibly to the bottom. Shell does not identify the types of oils by Group which they handle in their Oil Spill Response Manual nor do they discuss response capabilities by Group. Shell handles asphalt and other products which may be Group V oils. If this is the case, a release of a Group V oil could result in significant impacts (Class I).	I	<b>OS-4:</b> Shell shall not handle Group V oils (these oils have a specific gravity greater than 1 and do not float on the water) until it has installed the required Group V oil spill mitigating equipment and incorporated the specific response procedures into its Oil Spill Pollution Prevention and Response Plan. If Shell intends to handle Group V oils, they shall notify the California State Lands Commission (CSLC) in writing with submission of the engineering designs of the proposed equipment for MFD review. The restriction shall remain in place until Shell decides to handle Group V oils and has completed the process of implementing the required changes.
<b>OS-5</b>	Spills from the Shell Terminal during non-transfer periods would be associated with pipelines. Shell is required to comply with MOTEMS, and impacts are considered adverse, but less than significant (Class III).	III	None required.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.1 OPERATION SAFETY/RISK OF UPSET</b>			
<b>OS-6</b>	Residential areas are beyond the hazard footprint boundary; however, there is an extremely small probability that the Martinez Marina could be impacted by a tanker explosion. Because of the extremely low probability of this event, it is concluded that fires and explosions would not cause a public safety risk (Class III). However, a major fire at the Shell Terminal could result in a significant oil spill. Hence, a significant adverse (Class II) impact has been identified.	II	<p><b>OS-6a:</b> Shell shall implement MM OS-3a to provide for quick release devices, capable of being activated in 60 seconds, that would allow a vessel to depart the Shell Terminal quickly in the event of a fire.</p> <p><b>OS-6b:</b> Shell shall develop a Fire Plan, including a set of procedures, training and drills consistent with Section 3108F2.2 of 24 CCR, Part 2, California Building Code, Chapter 31F. Shell shall submit the Fire Plan to the CSLC within 90 days of signing the lease agreement, or by August 6, 2008, whichever comes first. The CSLC shall have final approval of the plan.</p>
<b>OS-7</b>	Spills from accidents in the Bay could result in impacts to water quality or biological resources that could be significant adverse (Class II) impacts for those that can be contained during first response efforts; or significant adverse (Class I) impacts that would have residual impacts. While Shell does not have legal responsibility for tankers it does not own, it does have responsibility to participate in improving general response capabilities.	I or II	<p><b>OS-7a:</b> Shell shall participate in an analysis to determine the adequacy of the existing Vessel Tracking System (VTS) in the Bay Area, if such a study is conducted by a Federal, State, or local agency during the life of the lease. Shell shall designate a representative(s) to participate in this analysis toward the upgrade or expansion of the VTS per terms, including financial, to be agreed upon with other study participants.</p> <p><b>OS-7b:</b> Shell shall respond to any spill from a vessel traveling to or from the wharf, moored at its wharf, related in any way to the wharf, or carrying cargo owned by Shell, as if it were its own, without assuming liability, until such time as the vessel's response organization can take over management of the response actions in a coordinated manner.</p>

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.2 WATER QUALITY</b>			
<b>WQ-1</b>	Disturbed sediments could cause a brief, localized increase in turbidity and depression in dissolved oxygen concentrations, but would disperse rapidly with the strong tidal currents in the area, and be rapidly mitigated by tidal mixing with Bay waters of high dissolved oxygen concentration. Such events would occur for an hour or less during a 24-hour period and be limited to the immediate vicinity of the Shell Terminal, thus increased turbidity due to vessel traffic would be adverse, but less than significant (Class III).	III	None required.
<b>WQ-2</b>	Discharge of ballast water that contains harmful microorganisms could impair several of the Project area's beneficial uses, including commercial and sport fishing, estuarine habitat, fish migration, preservation of rare and endangered species, water contact recreation, non-contact water recreation, fish spawning, and wildlife habitat. Therefore discharge of segregated ballast water is determined to have a potentially significant impact to water quality (Class I).	I	<b>WQ-2:</b> Following the adoption of the Mitigation Monitoring Program for the proposed Project, Shell will advise both agents and representatives of shipping companies having control over vessels that have informed Shell of plans to call at the Shell Terminal about the California Marine Invasive Species Act. Shell will ensure that a Questionnaire containing the following questions is provided to the Vessel Operator, and inform the Vessel Operator that the Questionnaire should be completed on behalf of the vessel, by its Captain or authorized representative, and provided to the CSLC's Marine Facilities Division's Northern California Field and Sacramento Offices, either electronically or by facsimile, prior to the vessel's entry into San Francisco Bay or in the alternative, at least 24 hours prior to the vessel's arrival at the Shell Terminal.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.2 WATER QUALITY</b>			
			<p>The Questionnaire shall solicit the following information:</p> <ol style="list-style-type: none"> <li>1. Does the vessel intend to discharge ballast water in San Francisco Bay, the Carquinez Strait or any other location(s) in a Bay waterway on its transit to the Shell Terminal?</li> <li>2. Does the vessel intend to discharge ballast water at the Shell Terminal?</li> <li>3. Which of the following means specified in the California Marine Invasive Species Act (MISA) or Title 2, Division 3, Chapter 1, Article 4.6. has the vessel operator used or intend to use on the current voyage to manage the vessel's ballast water: a mid-ocean exchange (as defined in Section 71200(g)); a near-coastal exchange (as defined in Section 71201(b)); retain all ballast on board; or discharge the ballast water at the same location (as defined in Section 71204.2(c)(2)) where ballast originated, provided ballast water was not mixed with ballast water taken on in an area other than mid-ocean waters?</li> </ol>
<b>WQ-3</b>	The impact of cooling water discharges on water quality would be adverse, but less than significant (Class III) as the increase in water temperature of the Bay would be negligible and would not exceed limitations set forth in the California Thermal Plan.	III	None required.
<b>WQ-4</b>	Non-segregated ballast water that is sent to the treatment facility may include nonindigenous organisms. Treatment at the facility does not include any specific procedures to prevent organisms that may be in ballast water from being discharged to Bay waters. Discharge of harmful microorganisms would be a significant adverse impact (Class II).	II	<b>WQ-4:</b> Shell shall not discharge any non-segregated ballast water received at the Shell Terminal to San Francisco Bay. If Shell needs to unload non-segregated ballast water, it shall be unloaded into a tanker truck or other suitable wastehandling vehicle and disposed of at an appropriate facility.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.2 WATER QUALITY</b>			
<b>WQ-5</b>	Spills of sanitary wastewater, cargo tank washwater or bilge water could degrade water quality and many spills would constitute chronic long-term degradation of water quality, resulting in a significant adverse impact (Class II).	II	<b>WQ-5:</b> Shell shall prepare a Spill Prevention Plan for ships visiting the Shell Terminal that includes Best Management Practices (BMPs) specifically to prevent leaks and spills during transfer of liquids between vessels and trucks on the Shell Terminal. The Spill Prevention Plan shall be prepared within 6 months of lease implementation and reviewed by the CSLC and be available to the RWQCB.
<b>WQ-6</b>	The slow leaching of zinc anodes may increase metal concentrations, but due to the slow rate of exchange of the anodes to seawater, the impact of cathodic protection on water quality is adverse, but less than significant (Class III).	III	None required.
<b>WQ-7</b>	Use by marine vessels of anti-fouling paints containing copper, sodium, zinc, and tributyltin (TBT) are considered toxic and present a significant adverse impact to water quality that cannot be mitigated to a less than significant (Class I) level.	I	<b>WQ-7:</b> Following the adoption of the Mitigation Monitoring Program for the proposed Project, Shell will advise both agents and representatives of shipping companies having control over or representing vessels that have informed Shell of plans to call at the Shell Terminal about the requirements of the 2008 International Maritime Organization (IMO) prohibition of TBT applications to vessel hulls. Following the effective date of the IMO prohibition, Shell will ensure that the Master or authorized representative of vessels intending to call at the Shell Terminal certify that their vessel is in compliance and provide a copy of such certification to the California State Lands Commission's Marine Facilities Division's Northern California Field and Sacramento Offices, either electronically or by facsimile, prior to the vessel's entry into San Francisco Bay, or in the alternative, at least 24 hours prior to the vessel's arrival at the Shell Terminal.
<b>WQ-8</b>	Routine vessel maintenance would have the potential to degrade water quality due to chronic spills during transfers of lubricating oils, resulting in adverse significant (Class II) impacts.	II	<b>WQ-8:</b> MM WQ-5 applies which addresses preparation of a Spill Prevention Plan that includes Best Management practices (BMPs) for the Shell Terminal.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.2 WATER QUALITY</b>			
<b>WQ-9</b>	Stormwater runoff from the Shell Terminal may contribute pollutants to the Bay in concentrations that may adversely affect some benthic species within the local area, resulting in a significant adverse impact (Class II) to water quality.	II	<b>WQ-9:</b> Shell shall prepare a Storm Water Pollution Prevention Plan (SWPPP) specifying BMPs to reduce the input of chemicals to the Bay from the Shell Terminal. Shell shall coordinate with the Regional Water Quality Control Board in developing the SWPPP that Shell shall prepare specifically for the Shell Terminal. BMPs for consideration shall include (at a minimum) (1) conducting all vehicle maintenance on land not over water or marshland, (2) berming all areas on the pier where maintenance activities are being conducted and cleaning up all spilled contaminants before berms are removed, (3) washing the surface of the pier to the extent practical and directing washwater into sumps, (4) maintenance of sumps, and (5) posting signs to educate all workers to the importance of keeping contaminants from entering the Bay.
<b>WQ-10</b>	The effects of dredging and dredged material disposal on water quality are regulated and subject to acquisition of a dredging permit prior to dredging, thus impacts on water quality are adverse, but less than significant (Class III).	III	None required.
<b>WQ-11</b>	Potential impacts on water quality can result from leaks or spills. Small leaks or spills (less than 50 bbl) related to Shell Terminal operations could result in significant (Class II) impacts, while large spills (greater than 50 bbl) could result in significant adverse impacts (Class I).	I or II	<b>WQ-11:</b> Implement MM OS-3a through MM OS-3c and MM OS-4 in Operational Safety/Risk of Upset to provide greater safety in preventing spills and improving response capability.
<b>WQ-12</b>	A significant impact to water quality (Class I or II) could result from leaks or an accidental spill of crude oil or oil product from a vessel spill along tanker routes either in San Francisco Bay or outer coast waters.	I or II	<b>WQ-12:</b> Shell shall implement MM OS-7a and MM OS-7b of the Operational Safety/Risk of Upset section, addressing potential participation in VTS upgrade evaluations, and Shell response actions for spills at or near the Shell Terminal.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.3 BIOLOGICAL RESOURCES</b>			
<b>BIO-1</b>	Ship traffic associated with Shell Terminal terminal operations represents an incremental amount of noise compared to the background noise of ship traffic in San Francisco Bay and along outer coast tanker routes, thus disturbance to fishes from routine operations at the terminal are less than significant (Class III). Birds local to the terminal have adapted to vessel traffic, and impacts are adverse, but less than significant (Class III).	III	None required.
<b>BIO-2</b>	The area near the Shell Terminal berths where propeller wash and bow thrusters may disturb sediments is very small compared to the amount of benthic habitat in the Project study area, and impacts of tanker sediment turbulence on benthic communities are adverse, but less than significant (Class III).	III	None required.
<b>BIO-3</b>	Loss of juvenile Dungeness crabs and young Chinook salmon would be a significant, adverse impact because dredging at the time when juveniles are moving through the area could disrupt the migration patterns of these species (Class II). Because of the low volume of material dredged, impacts are adverse, but less than significant impacts (Class III) to plankton, other benthos, other fishes, and birds.	II or III	<p><b>BIO-3a:</b> The Shell Terminal shall schedule dredging to avoid the months of May and June when juvenile Dungeness crabs are most abundant in the Project study area.</p> <p>In the event that, due to circumstances beyond lessee's control, dredging must occur in May and June to maintain a depth for safe navigation and operation of the terminal, lessee shall consult with the California Department of Fish and Game (CDFG) regarding the potential effects of such dredging on juvenile Dungeness Crabs and Chinook salmon smolts. Such consultation may occur directly with CDFG personnel in Region 3 or with CDFG personnel during the consideration of lessee's application to the Dredged Material Management Office (DMMO). If the CDFG concurs with dredging as proposed by the lessee, documentation of which shall be provided to Lessor, it shall be conclusively presumed that juvenile Dungeness Crabs and Chinook salmon smolts will not be significantly affected, and dredging may proceed as provided herein.</p>



**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.3 BIOLOGICAL RESOURCES</b>			
			<b>BIO-3b:</b> Although chances of entrainment of salmon are relatively low, to protect the salmon, the Shell Terminal shall schedule dredging in June through November when winter and spring run Chinook salmon smolt activity is lowest. See also, consultation with CDFG in BIO-3a, above.
<b>BIO-4</b>	Invasive organisms/introduction of non-indigenous species in ballast water released in the Bay could have significant (Class I) impacts to plankton, benthos, fishes, and birds.	I	<p><b>BIO-4a:</b> Implement MM WQ-2 in Water Quality, which requires that Shell comply with the California Marine Invasive Species Act of 2003 and related CSLC requirements and the Ballast Water Management for Control of Non-Indigenous Species Act, and fill out a questionnaire to enable the CSLC to better track the management of ballast water. Implement MM WQ-4 requiring non-segregated ballast water to be unloaded to a suitable wastehandling vehicle and disposed of at an appropriate facility rather than being treated at the Shell effluent treatment facility shall apply.</p> <p><b>BIO-4b:</b> Shell shall participate and assist in funding ongoing and future actions related to invasive species and identified in the October 2005 Delta Smelt Action Plan (State of California 2005). The funding support shall be provided to the Pelagic Organism Decline Account or other account identified by the California Department of Water Resources (DWR) and Department of Fish and Game (CDFG), lead Action Plan agencies. The level of funding shall be determined through a cooperative effort between the CSLC and the DWR and the CDFG, and shall be based on criteria that establish Shell's commensurate share of the Plan's invasive species actions costs.</p>
<b>BIO-5</b>	Contaminant inputs into the water from Shell Terminal operations are low when compared to other pollutant sources in the Bay. The impacts on plankton, benthos, fishes, and birds are considered adverse, but less than significant (Class III) impacts.	III	None required.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.3 BIOLOGICAL RESOURCES</b>			
<b>BIO-6</b>	The impacts of a spill on the biota at or near the Shell Terminal have the potential to spread through Carquinez Strait and into Suisun and San Pablo Bays. Vulnerable biota are plankton, benthos, eelgrass, fishes, marshes, birds, and mammals. Per Section 4.1, Operational Safety/Risk of Accidents, small spills at the Shell Terminal (less than 50 bbls) should be able to be contained (Class II impacts). However, spills larger than 50 bbls may not be able to be contained and impacts from large spills are considered to be significant adverse (Class I) impacts.	I or II	<p><b>BIO-6a:</b> Implement MM OS-3a-c and MM OS-4 from Operational Safety/Risk of Accidents section, to either lower the probability of an oil spill or increase response capability.</p> <p><b>BIO-6b:</b> Shell shall identify a source of sonic hazing devices to scare birds away from Suisun Shoal and demonstrate to the satisfaction of the OSPR that these devices can be deployed within 3 hours of a spill at the Shell Terminal.</p> <p><b>BIO-6c:</b> When a spill occurs, develop procedures for clean up of any sensitive biological areas contacted by oil, in consultation with biologists from California Department of Fish and Game and U.S. Fish and Wildlife Service, to avoid damage from clean up activities.</p> <p><b>BIO-6d:</b> If damage occurs, the last resort is restoration and compensation. Shell shall document any loss of resources as soon as possible after a large spill. The sampling methods and design should be determined beforehand, and the plan should include provisions for getting resources onsite as soon as possible so that post-spill studies can begin immediately.</p>
<b>BIO-7</b>	A significant impact to biological resources (Class I or II impact) could result from spills of crude oil or product from a vessel in transit along tanker routes either in San Francisco Bay or outer coast waters.	I or II	<b>BIO-7:</b> Shell shall implement MM OS-7a and MM OS-7b from Operational Safety/Risk of Accidents section, addressing potential participation in VTS upgrade evaluations, and Shell response actions for spills at or near the Shell Terminal.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.4 COMMERCIAL AND SPORTS FISHERIES</b>			
<b>FSH-1</b>	Commercial trawling near the Shell Terminal is limited, although the Carquinez Strait shrimp fishery is located in the direct vicinity of the Shell Terminal. Based on the impact significance criteria, space use impacts on the shrimp fishery are expected to continue to be significant (Class II). Space use conflicts between sport fishing and continuing Shell Terminal activities are considered to be adverse, but less than significant (Class III).	III	<b>FSH-1:</b> Shell officials shall notify shrimp trawlers operating in Carquinez Strait of increases in vessel calls to the Shell Terminal. Shell Terminal officials shall work with shrimp trawlers to avoid conflicts between fishing and normal Shell Terminal operations. In addition, Shell shall inform incoming vessel operators of shrimp trawling activities near the Shell Terminal.
<b>FSH-2</b>	Fisheries depend on a healthy environment to survive and flourish. Invasive species discharged from ballast water could impair water quality (Impact WQ-2) and biological resources (Impact BIO-4). These impacts to fisheries resources would impair commercial and sports fishing activities in the Bay and outer coast, resulting in significant adverse impacts (Class I).	I	<b>FSH-2a:</b> Shell shall: (1) carry out MM WQ-2 for segregated ballast water reporting for each vessel and (2) distribute advisories about the California Marine Invasive Species Act and MM BIO-4a for disposal of non-segregated ballast water.  <b>FSH-2b:</b> Implement BIO-4b that requires Shell participate and assist in funding ongoing and future actions related to invasive species and identified in the October 2005 Delta Smelt Action Plan (State of California 2005).
<b>FSH-3</b>	Shell routine operations contribute to contamination of waters near the Shell Terminal, but impacts on sport and commercial fisheries are expected to be adverse, but less than significant (Class III).	III	None required.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.4 COMMERCIAL AND SPORTS FISHERIES</b>			
<b>FSH-4</b>	Over the 30-year lease, Shell may dredge Berths # 3 and # 4 to accommodate more vessels. This dredging is expected to cause a significant (Class II) impact on fish habitat.	II	<b>FSH-4:</b> Implement MM BIO-3a and MM BIO-3b which lay out dredging windows for Dungeness crab and Chinook salmon.
<b>FSH-5</b>	Space use conflicts between transiting vessels serving the Shell Terminal and shrimp trawling is expected to be significant (Class II) due to temporary, but ongoing, blocking of trawl grounds while vessels transit through the Carquinez Strait.	II	<b>FSH-5:</b> Implement MM FSH-1, requiring Shell to notify shrimp trawlers of increased vessel calls to Shell Terminal, and to inform incoming vessels operators of shrimp trawling activities.
<b>FSH-6</b>	Space use conflicts between transiting vessels serving the Shell Terminal and commercial herring operators could occur resulting in interference or displacement of herring fishing activities. A significant impact could result (Class II).	II	<b>FSH-6:</b> Shell shall notify the Pacific herring fishery during the herring season of vessel transits. Shell shall also participate in the Pacific herring commercial fishery annual public scoping and hearing process, part of CDFG's annual review of herring commercial fishing regulations. CDFG has the authority to modify or develop regulations to address space use conflicts between the fishery and Shell's operations.
<b>FSH-7</b>	Space use conflicts between sport fisheries in the Bay and transiting vessels serving the Shell Terminal are significant (Class II). Vessels transiting to and from the Shell Terminal do not contribute to siltation of the Martinez Marina, and are considered adverse, but less than significant (Class III).	II or III	<b>FSH-7:</b> Shell officials shall inform incoming vessel operators of sport fishing activities near the Shell Terminal.
<b>FSH-8</b>	Vessel operators handling crude oil and product may affect commercial or recreational fishing; space use conflicts are expected to be adverse, but less than significant (Class III).	III	None required.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.4 COMMERCIAL AND SPORTS FISHERIES</b>			
<b>FSH-9</b>	Shrimp, herring and sport fisheries in central and north San Francisco Bay, San Pablo Bay, Carquinez Strait, Napa River and Honker Bay are at the highest risk of spill contamination. Depending on spill location, size and water and weather conditions, areas upstream of the confluence of the Sacramento and San Joaquin rivers may also suffer harm. In addition, the Bay marinas, launch ramps and fishing access points may be threatened, contaminated or closed. Significant adverse impacts (Class I or II) to Bay commercial and sport fisheries would result from oil spill accidents originating at the Shell Terminal or from tankers transiting the coast that service the Shell Terminal.	I or II	<p><b>FSH-9a:</b> Implement MM OS-3 and MM OS-4 in Operational Safety/Risk of Accidents, and MM BIO-6b through BIO-6d in Biological Resources, to lower the probability of an oil spill and increase response capability.</p> <p><b>FSH-9b:</b> Post notices at spill sites, marinas, launch ramps and fishing access points to warn fishing interests of locations of contaminated sites. Notices shall be written in English and Spanish, and be posted in areas most likely to be seen by fishing interests.</p> <p><b>FSH-9c:</b> If damages to fishing operations or related businesses occur, as a last resort provide financial compensation. Any losses shall be documented as soon as possible after a spill, using methods for determining damages established beforehand. Response for damage losses should include provisions for compensating operators and businesses as soon as possible.</p> <p><b>FSH-9d:</b> Following a spill, evaluate the effectiveness of oil spill mitigation measures used to respond to a spill caused at the Shell Terminal by tankers calling at the wharf. Results of the evaluation would be available to public decision-makers to ensure refinement, and if necessary, modification of mitigation measures. Evaluation would be done only after an accident and would include monitoring using scientifically accepted protocols. Costs for the evaluation would be borne by Shell for spills caused at the Shell Terminal. Shell shall contribute to independent public or private organizations or oil spill research. Contributions would be determined in cooperation with the evaluating organizations, agencies, and the CSLC.</p> <p><b>FSH-9e:</b> Update the Shell Terminal Oil Spill Response Plan to prominently mention Martinez Marina as an oil spill response facility and deployment site and to list the available equipment, supplies and vessels available to Shell which are located at the Marina.</p>

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.4 COMMERCIAL AND SPORTS FISHERIES</b>			
<b>FSH-10</b>	Significant adverse impacts (Class I or II) to outer coast commercial and sport fisheries could result from oil spill accidents from transiting tankers calling at the Shell Terminal. The level of impact would depend on the size of the spill, location, and fisheries occurring in the area of spread of the spill.	I or II	<b>FSH-10:</b> Shell Terminal officials shall implement MM OS-7a and MM OS-7b for VTS upgrade participation and to provide immediate spill response near/at the terminal. Shell shall implement MM FSH-9b through MM FSH-9d to notify fishing interests of possible fishing areas, to help offset the losses to fishing interests and businesses dependent on fishing activities, and to evaluate the effectiveness of mitigation measures.
<b>Section 4.5 LAND USE AND RECREATION</b>			
<b>LU-1</b>	The proposed Project would not conflict with any existing or future planned policy issues or plans. Proposed Project impacts with regard to policy inconsistency would be less than significant (Class III).	III	None required.
<b>LU-2</b>	The proposed Project would be compatible with adjacent and proximate land uses. Therefore, physical land use adverse impacts resulting from the proposed Project would be adverse, but less than significant (Class III).	III	None required.
<b>LU-3</b>	A number of recreational facilities (designated parks, wildlife preserves, open space, etc.) and recreational uses (nature viewing, boating, fishing, surfing, etc.) are within the potential area that could be impacted by the spread of oil. Shoreline and water-related uses would be disrupted by oil on the shoreline and in the water and could result in significant adverse (Class I or II) impacts.	I or II	<b>LU-3:</b> Mitigation measures for spills at the Shell Terminal would be the responsibility of Shell Terminal operations. Specific measures are presented in Operational Safety/Risk of Accidents, Water Quality, Biological Resources, and Commercial and Sport Fisheries.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.5 LAND USE AND RECREATION</b>			
<b>LU-4</b>	Spills, from vessels in transit in the shipping lanes, that beach along sensitive land use areas or heavily used areas including recreational areas would limit or preclude such uses and result in significant adverse (Class I or II) impacts, depending on the various characteristics of a spill and its residual effects.	I or II	<b>LU-4:</b> Mitigation measures for accidents in the shipping lanes would not be Shell Oil Products US responsibility, but would fall to the vessel operator/owner. Shell shall implement MM OS-7a and MM OS-7b in Operational Safety/Risk of Accidents for VTS upgrade participation and to provide immediate spill response near/at the terminal.
<b>Section 4.6 AIR QUALITY</b>			
<b>AQ-1</b>	Measured and calculated criteria pollutant emissions are below existing yearly Bay Area Air Quality Management District (BAAQMD) permitted levels. Continued operation of the Shell Terminal at current throughput levels would not result in significant air quality emissions impacts (Class III). Since the facility is already operational, worker commute emissions are already part of ambient conditions, thus non-permitted emissions impacts are adverse, but not significant.	III	None required.
<b>AQ-2</b>	Over the life of the lease, the anticipated vessel increase from 196 to 330 vessels per year would not exceed the limitations of the Shell's Refinery Emissions Cap (REFEMS Cap), and the impact is adverse, but less than significant (Class III).	III	None required.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.6 AIR QUALITY</b>			
<b>AQ-3</b>	Dredging activities represent short-term emissions associated with the “construction” of a deeper channel, and are not subject to the day-to-day operations’ criteria so long as all PM <sub>10</sub> suppression methods included in the <i>BAAQMD CEQA Guidelines</i> are administered. No fugitive dust emissions are raised during the dredging of wet sediment and none of the measures address PM <sub>10</sub> associated with exhaust. As such, construction emissions associated with short-term dredging are adverse, but less than significant (Class III).	III	None required.
<b>AQ-4</b>	The Shell Terminal is in compliance with the BAAQMD permitting for hazardous and toxic pollutants. Impacts are adverse, but less than significant (Class III).	III	None required.
<b>AQ-5</b>	No sensitive receptors are located in the immediate area and the Shell Terminal does not emit odors that are/have been reported in the local area. Impacts are adverse, but less than significant (Class III).	III	None required.
<b>AQ-6</b>	Measured and calculated greenhouse gas emissions are below 1995 baseline levels. Continued operation of the Shell Terminal at current throughput levels would not result in significant greenhouse gas emissions impacts (Class III). Since the facility is already operational, greenhouse gas emissions are already part of ambient conditions, greenhouse gas emissions impacts are adverse, but not significant.	III	None required.



**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.7 NOISE</b>			
<b>N-1</b>	Because the Shell Terminal already exists, it is considered part of the ambient noise environment. While it is located in an industrial area, sensitive receptors are located within the City to the south. Over the lease period, no new sensitive receptors would be expected to be constructed proximate to the Shell Terminal. Impacts would be less than significant (Class III).	III	None required.
<b>N-2</b>	Over the 30 years of the lease period, Shell Terminal operations could increase from 196 to as many as 330 average annual ship and barge visits raising the current noise level. Impacts would be adverse, but less than significant (Class III).	III	None required.
<b>N-3</b>	No substantial permanent increase in ambient noise levels in the Project vicinity above existing levels would occur from increased operations (stationary or mobile noise sources) over the 30-year lease period. Impacts would be less than significant (Class III).	III	None required.
<b>N-4</b>	To accommodate the increase in vessel traffic over the 30-year lease, the area in and around Berths # 3 and # 4 may require dredging. Noise from any nighttime dredging has the potential to impact receptors at the Martinez Marina (Class II).	II	<b>N-4:</b> Any dredging to be performed within 0.42 mile (2,250 feet) of any sensitive land use or live aboard boat shall be restricted to between the hours of 7:00 a.m. and 10:00 p.m.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.9 VISUAL RESOURCES/LIGHT AND GLARE</b>			
<b>VR-1</b>	Over the lease period, tankers would be berthed at the Shell Terminal in a manner consistent with existing conditions. Over the lease period, there could be additional berthings if Berths #3 and #4 are dredged and used for barges. However, as the primary view is from the Martinez Marina and Martinez Regional Shoreline, visual affects would remain similar to present conditions, and impacts are considered less than significant (Class III). The Shell Terminal cannot be seen from Vista Marina Road, as views are obstructed by the Refinery. Visual impacts or night lighting impacts associated with continued operations are less than significant (Class III).	III	None required.
<b>VR-2</b>	The visual impacts of a spill could last for a long period of time, depending on the level of physical impact and cleanup ability, and are considered to be adverse and significant (Class I or II).	I or II	<b>VR-2:</b> Mitigation measures for oil spill impacts include those measures for contingency planning and response as presented in Operational Safety/Risk of Accidents and Biological Resources.
<b>VR-3</b>	Spills, from vessels in transit in the shipping lanes, would change the color and texture of water and shoreline conditions. The level of public sensitivity and expectations of viewers would result in a negative impression of the viewshed and result in significant adverse (Class I or II) impacts, depending on the various characteristics of a spill and its residual effects.	I or II	<b>VR-3:</b> Mitigation measures for accidents in the shipping lanes would not be Shell's responsibility, but would fall to the vessel operator/owner. Shell shall implement MM OS-7a and MM OS-7b in Operational Safety/Risk of Accidents for VTS upgrade participation and to provide immediate spill response at/near the terminal.
<b>Section 4.11 GEOLOGICAL RESOURCES/STRUCTURAL INTEGRITY</b>			
<b>GEO-1</b>	The Shell Terminal is not located in the Alquist-Priolo earthquake fault zone. Surface rupture from known active faults is not anticipated, and impacts would be less than significant (Class III).	III	None required.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.11 GEOLOGICAL RESOURCES/STRUCTURAL INTEGRITY</b>			
<b>GEO-2</b>	The impact of berth dredging, natural scour or accumulation of soil in steep slopes near or adjacent to Shell Terminal wharf piles should be considered in soil-structure interaction. In addition, lateral spreading (downslope movement) resulting from any moderate earthquake may result in damage to the Terminal. Shell is required to comply with MOTEMS and impacts are adverse, but less than significant (Class III).	III	None required.
<b>GEO-3</b>	The site has not had a current industry standard liquefaction evaluation performed. As such, the potential for impacts from seismically induced settlement are unknown. Because Shell is required to comply with MOTEMS, impacts are adverse, but less than significant (Class III).	III	None required.
<b>GEO-4</b>	Tsunamis would attenuate to minimal wave heights at the Shell Terminal, and impacts are considered adverse, but less than significant (Class III).	III	None required.
<b>GEO-5</b>	No documentation was received indicating that the Shell Terminal structures have been analyzed for the maximum credible earthquake as specified by the MOTEMS criteria. Consequently, the impacts of a major earthquake on the Shell Terminal are unknown. Because Shell is required to comply with MOTEMS, impacts are adverse, but less than significant (Class III).	III	None required.

**Table ES-1 (continued)**  
**Summary of Environmental Impacts for the Proposed Project**

Impact No.	Impact	Impact Class	Recommended Mitigation Measures
<b>Section 4.11 GEOLOGICAL RESOURCES/STRUCTURAL INTEGRITY</b>			
<b>GEO-6</b>	No analysis has been provided for berthing larger vessels at the Shell Terminal. Berthing of larger vessels may overload the fender system and, as a result, the piling. Overloading the piling may result in cracking at the cap, separation of piles from the cap or failure of the piles. Consequently, the impacts of a berthing accident are unknown. Because Shell is required to comply with MOTEMS, impacts are adverse, but less than significant (Class III).	III	None required.
<b>Section 4.12 ENVIRONMENTAL JUSTICE</b>			
<b>EJ-1</b>	Overall, Project impacts would affect resources used by the entire Bay community, whether or not they are minority or low-income, and would therefore not have a disproportionate impact on a minority of low-income population. Environmental Justice impacts are considered less than significant (Class III) for all except shrimp and sport fisheries, which is a Class II impact.	II or III	<b>EJ-1:</b> Should an oil spill from the Shell Terminal extend beyond 0.5 mile from the Terminal and preclude subsistence fishing by members of minority and/or low income communities for more than two days, Shell shall contribute either funds or food stuffs to a local food bank in an amount sufficient, as determined in conjunction with the CSLC, to replace food sources that would have been supplied by fishing activities within the affected areas.

**Table ES-2**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact Classes

- I = Significant adverse impact that remains significant after mitigation.
- II = Significant adverse impact that can be eliminated or reduced below an issue's significance criteria.
- III = Adverse impact that does not meet or exceed an issue's significance criteria.
- IV = Beneficial impact.
- NA = Not Applicable to the Shell Terminal. May transfer similar impact(s) to other area terminals.

Alt 1: Full Throughput Alternative

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>OPERATIONAL SAFETY/RISK OF UPSET</b>				
<b>OS-1</b>	There are some deficiencies with the existing deck drainage system or procedures that would pose a risk for, or increase the potential for spills at the Shell Terminal from routine operations. Preventative maintenance and operational equipment are required by MOTEMS, and impacts are adverse, but less than significant (Class III).	III	IV	NA
<b>OS-2</b>	Potential impacts to public safety from a highly volatile product release are less than significant (Class III) since the liquids disperse quickly.	III	IV	NA
<b>OS-3</b>	Shell's response capability for containment of spills during transfer operations would be adverse and significant for spills greater than 50 barrels (bbls), and range from spills that can be contained during first response efforts with rapid cleanup (Class II), to those complex spills that result in a significant impact (Class I) with residual effects after mitigation.	I or II	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>OPERATIONAL SAFETY/RISK OF UPSET</b>				
<b>OS-4</b>	Group V oils have a specific gravity greater than 1 and do not float on the water; instead, they will sink below the surface into the water column or possibly to the bottom. Shell does not identify the types of oils by Group which they handle in their Oil Spill Response Manual nor do they discuss response capabilities by Group. Shell handles asphalt and other products which may be Group V oils. If this is the case, a release of a Group V oil could result in significant impacts (Class I).	I	IV	NA
<b>OS-5</b>	Spills from the Shell Terminal during non-transfer periods would be associated with pipelines. Shell is required to comply with MOTEMS, and impacts are considered adverse, but less than significant (Class III).	III	IV	NA
<b>OS-6</b>	Residential areas are beyond the hazard footprint boundary; however, there is an extremely small probability that the Martinez Marina could be impacted by a tanker explosion. Because of the extremely low probability of this event, it is concluded that fires and explosions would not cause a public safety risk (Class III). However, a major fire at the Shell Terminal could result in a significant oil spill. Hence, a significant adverse (Class II) impact has been identified.	II	IV	NA
<b>OS-7</b>	Spills from accidents in the Bay could result in impacts to water quality or biological resources that could be significant adverse (Class II) impacts for those that can be contained during first response efforts; or significant adverse (Class I) impacts that would have residual impacts. While Shell does not have legal responsibility for tankers it does not own, it does have responsibility to participate in improving general response capabilities.	I or II	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>WATER QUALITY</b>				
<b>WQ-1</b>	Disturbed sediments could cause a brief, localized increase in turbidity and depression in dissolved oxygen concentrations, but would disperse rapidly with the strong tidal currents in the area, and be rapidly mitigated by tidal mixing with Bay waters of high dissolved oxygen concentration. Such events would occur for an hour or less during a 24-hour period and be limited to the immediate vicinity of the Shell Terminal, thus increased turbidity due to vessel traffic would be adverse, but less than significant (Class III).	III	IV	NA
<b>WQ-2</b>	Discharge of ballast water that contains harmful microorganisms could impair several of the project area's beneficial uses, including commercial and sport fishing, estuarine habitat, fish migration, preservation of rare and endangered species, water contact recreation, non-contact water recreation, fish spawning, and wildlife habitat. Therefore discharge of segregated ballast water is determined to have a potentially significant impact to water quality (Class I).	I	IV	NA
<b>WQ-3</b>	The impact of cooling water discharges on water quality would be adverse, but less than significant (Class III) as the increase in water temperature of the Bay would be negligible and would not exceed limitations set forth in the California Thermal Plan.	III	IV	NA
<b>WQ-4</b>	Non-segregated ballast water that is sent to the treatment facility may include nonindigenous organisms. Treatment at the facility does not include any specific procedures to prevent organisms that may be in ballast water from being discharged to Bay waters. Discharge of harmful microorganisms would be a significant adverse impact (Class II).	II	IV	NA
<b>WQ-5</b>	Spills of sanitary wastewater, cargo tank washwater or bilge water could degrade water quality and many spills would constitute chronic long-term degradation of water quality, resulting in a significant adverse impact (Class II).	II	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>WATER QUALITY</b>				
<b>WQ-6</b>	The slow leaching of zinc anodes may increase metal concentrations, but due to the slow rate of exchange of the anodes to seawater, the impact of cathodic protection on water quality is adverse, but less than significant (Class III).	III	IV	NA
<b>WQ-7</b>	Use by marine vessels of anti-fouling paints containing copper, sodium, zinc, and tributyltin (TBT) is considered toxic and presents a significant adverse impact to water quality that cannot be mitigated to less than significant (Class I).	I	IV	NA
<b>WQ-8</b>	Routine vessel maintenance would have the potential to degrade water quality due to chronic spills during transfers of lubricating oils, resulting in adverse significant (Class II) impacts.	II	IV	NA
<b>WQ-9</b>	Stormwater runoff from the Shell Terminal may contribute pollutants to the Bay in concentrations that may adversely affect some benthic species within the local area, resulting in a significant adverse impact (Class II) to water quality.	II	IV	NA
<b>WQ-10</b>	The effects of dredging and dredged material disposal on water quality are regulated and subject to acquisition of a dredging permit prior to dredging, thus impacts on water quality are adverse, but less than significant (Class III).	III	IV	NA
<b>WQ-11</b>	Potential impacts on water quality can result from leaks or spills. Small leaks or spills (less than 50 bbl) related to Shell Terminal operations could result in significant (Class II) impacts, while large spills (greater than 50 bbl) could result in significant adverse impacts (Class I).	I or II	IV	NA
<b>WQ-12</b>	A significant impact to water quality (Class I or II) could result from leaks or an accidental spill of crude oil or oil product from a vessel spill along tanker routes either in San Francisco Bay or outer coast waters.	I or II	IV	NA



**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>BIOLOGICAL RESOURCES</b>				
<b>BIO-1</b>	Ship traffic associated with Shell Terminal terminal operations represents an incremental amount compared to the background noise of ship traffic in San Francisco Bay and along outer coast tanker routes, thus disturbance to fishes from routine operations at the terminal are less than significant impacts (Class III). Birds local to the terminal have adapted to vessel traffic, and impacts are less than significant (Class III).	III	IV	NA
<b>BIO-2</b>	The area near the Shell Terminal berths where propeller wash and bow thrusters may disturb sediments is very small compared to the amount of benthic habitat in the Project study area, and impacts of tanker sediment turbulence on benthic communities are adverse but less than significant (Class III).	III	IV	NA
<b>BIO-3</b>	Loss of juvenile Dungeness crabs and young Chinook salmon would be a significant, adverse impact because dredging at the time when juveniles are moving through the area could disrupt the migration patterns of these species (Class II). Because of the low volume of material dredged, impacts are adverse, but less than significant (Class III) to plankton, other benthos, other fishes, and birds.	II or III	IV	NA
<b>BIO-4</b>	Invasive organisms/introduction of non-indigenous species in segregated ballast water released in the Bay could have significant (Class I) impacts to plankton, benthos, fishes, and birds.	I	IV	NA
<b>BIO-5</b>	Contaminant inputs into the water from Shell Terminal operations are low when compared to other pollutant sources in the Bay. The impacts on plankton, benthos, fishes, and birds are considered adverse, but less than significant (Class III).	III	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>BIOLOGICAL RESOURCES</b>				
<b>BIO-6</b>	The impacts of a spill on the biota at or near the Shell Terminal have the potential to spread through Carquinez Strait and into Suisun and San Pablo Bays. Vulnerable biota are plankton, benthos, eelgrass, fishes, marshes, birds, and mammals. Per Section 4.1, Operational Safety/Risk of Accidents, small spills at the Shell Terminal (less than 50 bbls) should be able to be contained (Class II impacts). However, spills larger than 50 bbls may not be able to be contained and Shell may not have adequate boom to protect all the sensitive areas at the most risk that could be oiled within 3 hours of a spill from the Shell Terminal. Impacts from large spills are considered to be significant adverse (Class I) impacts.	I or II	IV	NA
<b>BIO-7</b>	A significant impact to biological resources (Class I or II impact) could result from spills of crude oil or product from a vessel in transit along tanker routes either in San Francisco Bay or outer coast waters.	I or II	IV	NA
<b>COMMERCIAL AND SPORTS FISHERIES</b>				
<b>FSH-1</b>	Commercial trawling near the Shell Terminal is limited, although the Carquinez Strait shrimp fishery is located in the direct vicinity of the Shell Terminal. Based on the impact significance criteria, space use impacts on the shrimp fishery are expected to continue to be significant and Class II. However, no shoreline fishing occurs within 0.5 mile of the Shell Terminal and charter boat landings are light, when compared with the Bay, as a whole. Space use conflicts between sport fishing and continuing Shell Terminal activities are considered to be less than significant (Class III).	III	IV	NA
<b>FSH-2</b>	Fisheries depend on a healthy environment to survive and flourish. Invasive species discharged from ballast water could impair water quality (Impact WQ-2) and biological resources (Impact BIO-4). These impacts to fisheries resources would impair commercial and sports fishing activities in the Bay and outer coast, resulting in significant adverse impacts (Class I).	I	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>COMMERCIAL AND SPORTS FISHERIES</b>				
<b>FSH-3</b>	Shell routine operations contribute to contamination of waters near the Shell Terminal, but impacts on sport and commercial fisheries are expected to be adverse, but less than significant (Class III).	III	IV	NA
<b>FSH-4</b>	Over the 30-year lease, Shell may dredge Berths # 3 and # 4 to accommodate more vessels. This dredging is expected to cause significant, but mitigable, impacts on fish habitat (Class II).	II	IV	NA
<b>FSH-5</b>	Space use conflicts between transiting vessels serving the Shell Terminal and shrimp trawling is expected to be significant (Class II) due to temporary, but ongoing, blocking of trawl grounds while vessels transit through the Carquinez Strait.	II	IV	NA
<b>FSH-6</b>	Space use conflicts between transiting vessels serving the Shell Terminal and commercial herring operators could occur resulting in interference or displacement of herring fishing activities. A significant impact could result (Class II).	II	IV	NA
<b>FSH-7</b>	Space use conflicts between sport fisheries in the Bay and transiting vessels serving the Shell Terminal are significant (Class II). Vessels transiting to and from the Shell Terminal do not contribute to siltation of the Martinez Marina, and are considered adverse, but less than significant (Class III).	II or III	IV	NA
<b>FSH-8</b>	Vessel operators handling crude oil and product may affect commercial or recreational fishing; space use conflicts are expected to be adverse, but less than significant (Class III).	III	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>COMMERCIAL AND SPORTS FISHERIES</b>				
<b>FSH-9</b>	Shrimp, herring and sport fisheries in central and north San Francisco Bay, San Pablo Bay, Carquinez Strait, Napa River and Honker Bay are at highest risk of spill contamination. Depending on spill location, size and water and weather conditions, areas upstream of the confluence of the Sacramento and San Joaquin rivers may also suffer harm. In addition, the Bay marinas, launch ramps and fishing access points may be threatened, contaminated or closed. Significant adverse impacts (Class I and II) to Bay commercial and sport fisheries would result from oil spill accidents originating at the Shell Terminal or from tankers transiting the coast that service the Shell Terminal.	I and II	IV	NA
<b>FSH-10</b>	Significant adverse impacts (Class I and II) to outer coast commercial and sport fisheries could result from oil spill accidents from transiting tankers calling at the Shell Terminal. The level of impact would depend on the size of the spill, location, and fisheries occurring in the area of spread of the spill.	I and II	IV	NA
<b>LAND USE AND RECREATION</b>				
<b>LU-1</b>	The proposed Project would not conflict with any existing or future planned policy issues or plans. Proposed Project impacts with regard to policy inconsistency would be less than significant (Class III).	III	IV	NA
<b>LU-2</b>	The proposed Project would be compatible with adjacent and proximate land uses. Therefore, physical land use adverse impacts resulting from the proposed Project would be less than significant (Class III).	III	IV	NA
<b>LU-3</b>	A number of recreational facilities (designated parks, wildlife preserves, open space, etc.) and recreational uses (nature viewing, boating, fishing, surfing, etc.) are within the potential area that could be impacted by the spread of oil. Shoreline and water-related uses would be disrupted by oil on the shoreline and in the water and could result in significant adverse (Class I or II) impacts.	I or II	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>LAND USE AND RECREATION</b>				
<b>LU-4</b>	Spills, from vessels in transit in the shipping lanes, that beach along sensitive land use areas or heavily used areas including recreational areas would limit or preclude such uses and result in significant adverse (Class I or II) impacts, depending on the various characteristics of a spill and its residual effects.	I or II	IV	NA
<b>AIR QUALITY</b>				
<b>AQ-1</b>	Measured and calculated criteria pollutant emissions are below existing yearly BAAQMD permitted levels. Continued operation of the Shell Terminal at current throughput levels would not result in significant air quality emissions impacts (Class III). Since the facility is already operational, worker commute emissions are already part of ambient conditions, thus non-permitted emissions impacts are adverse, but not significant.	III	IV	NA
<b>AQ-2</b>	Over the life of the lease, the anticipated vessel increase from 196 to 330 vessels per year would not exceed the limitations of the REFEMS Cap, and the impact is adverse, but less than significant (Class III).	III	IV	NA
<b>AQ-3</b>	Dredging activities represent short-term emissions associated with the "construction" of a deeper channel, and are not subject to the day-to-day operations' criteria so long as all PM <sub>10</sub> suppression methods included in the <i>BAAQMD CEQA Guidelines</i> are administered. No fugitive dust emissions are raised during the dredging of wet sediment and none of the measures address PM <sub>10</sub> associated with exhaust. As such, construction emissions associated with short-term dredging are adverse, but less than significant (Class III).	III	IV	NA
<b>AQ-4</b>	The Shell Terminal is in compliance with the BAAQMD permitting for hazardous and toxic pollutants. Impacts are adverse, but less than significant (Class III).	III	IV	NA
<b>AQ-5</b>	No sensitive receptors are located in the immediate area and the Shell Terminal does not emit odors that are/have been reported in the local area. Impacts are adverse, but less than significant (Class III).	III	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>AQ-6</b>	Measured and calculated greenhouse gas emissions are below 1995 baseline levels. Continued operation of the Shell Terminal at current throughput levels would not result in significant greenhouse gas emissions impacts (Class III). Since the facility is already operational, greenhouse gas emissions are already part of ambient conditions, greenhouse gas emissions impacts are adverse, but not significant.	III	IV	N/A
<b>NOISE</b>				
<b>N-1</b>	Because the Shell Terminal already exists, it is considered part of the ambient noise environment. While it is located in an industrial area, sensitive receptors are located within the City to the south. Over the lease period, no new sensitive receptors would be expected to be constructed proximate to the Shell Terminal. Impacts would be less than significant (Class III).	III	IV	NA
<b>N-2</b>	Over the 30 years of the lease period, Shell Terminal operations could increase from 196 to as many as 330 average annual ship and barge visits raising the current noise level. Impacts would be less than significant (Class III).	III	IV	NA
<b>N-3</b>	No substantial permanent increase in ambient noise levels in the Project vicinity above existing levels would occur from increased operations (stationary or mobile noise sources) over the 30-year lease period. Impacts would be less than significant (Class III).	III	IV	NA
<b>N-4</b>	To accommodate the increase in vessel traffic over the 30-year lease, the area in and around Berths # 3 and # 4 may require dredging.	III	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>VISUAL RESOURCES/LIGHT AND GLARE</b>				
<b>VR-1</b>	Over the lease period, tankers would be berthed at the Shell Terminal in a manner consistent with existing conditions. Over the lease period there could be additional berthings if Berths #3 and #4 are dredged and used for barges. However, as the primary view is from the Martinez Marina and Martinez Regional Shoreline, visual affects would remain similar to present conditions, and impacts are considered less than significant (Class III). The Shell Terminal cannot be seen from Vista Marina Road, as views are obstructed by the Refinery. Visual impacts or night lighting impacts associated with continued operations are less than significant (Class III).	III	IV	NA
<b>VR-2</b>	The visual impacts of a spill could last for a long period of time, depending on the level of physical impact and cleanup ability, and are considered to be adverse and significant (Class I or II).	I or II	IV	NA
<b>VR-3</b>	Spills, from vessels in transit in the shipping lanes, would change the color and texture of water and shoreline conditions. The level of public sensitivity and expectations of viewers would result in a negative impression of the viewshed and result in significant adverse (Class I or II) impacts, depending on the various characteristics of a spill and its residual effects.	I or II	IV	NA
<b>GEOLOGICAL RESOURCES/STRUCTURAL INTEGRITY</b>				
<b>GEO-1</b>	The Shell Terminal is not located in the Alquist-Priolo earthquake fault zone. Surface rupture from known active faults is not anticipated, and impacts would be less than significant (Class III).	III	IV	NA
<b>GEO-2</b>	The impact of berth dredging, natural scour or accumulation of soil in steep slopes near or adjacent to Shell Terminal wharf piles should be considered in soil-structure interaction. In addition, lateral spreading (downslope movement) resulting from any moderate earthquake may result in damage to the Terminal. Shell is required to comply with MOTEMS and impacts are adverse, but less than significant (Class III).	III	IV	NA

**Table ES-2 (continued)**  
**Summary of Environmental Impacts for Proposed Project and Alternatives**

Impact No.	Impact Description	Proposed Project	No Project	Alt 1
<b>GEOLOGICAL RESOURCES/STRUCTURAL INTEGRITY</b>				
<b>GEO-3</b>	The site has not had a current industry standard liquefaction evaluation performed. As such, the potential for impacts from seismically induced settlement are unknown. Shell is required to comply with MOTEMS and impacts are adverse, but less than significant (Class III).	III	IV	NA
<b>GEO-4</b>	Tsunamis would attenuate to minimal wave heights at the Shell Terminal, and impacts are considered adverse, but less than significant (Class III).	III	IV	NA
<b>GEO-5</b>	No documentation was received indicating that the Shell Terminal structures have been analyzed for the maximum credible earthquake as specified by the MOTEMS criteria. Consequently, the impacts of a major earthquake on the Shell Terminal are unknown. Because Shell is required to comply with MOTEMS, impacts are adverse, but less than significant (Class III).	III	IV	NA
<b>GEO-6</b>	No analysis has been provided for berthing larger vessels at the Shell Terminal. Berthing of larger vessels may overload the fender system and overload the piling. Overloading the piling may result in cracking at the cap, separation of piles from the cap or failure of the piles. Consequently, the impacts of a berthing accident are unknown. Because Shell is required to comply with MOTEMS, impacts are adverse, but less than significant (Class III).	III	IV	NA
<b>ENVIRONMENTAL JUSTICE</b>				
<b>EJ-1</b>	Overall, Project impacts would affect resources used by the entire Bay community, whether or not they are minority or low-income, and would therefore not have a disproportionate impact on a minority of low-income population. Environmental Justice impacts are considered less than significant (Class III) for all except shrimp and sport fisheries, which is Class II.	II or III	IV	NA